The parallel algorithm for the simulation of human tumor growth is a new invention at the present time. The tumor cells split too often, without any order and drop the ability to control their growths. In this book, the invention of the early detection of brain tumors growth is presented. The monitoring and visualization of tumor cells growth are based on the large scale mathematical simulation. The tools of partial different equations via multi-dimensional parabolic types are emphases as the computational engine for the future prediction of the cell growth. This study focuses on the implementation of parallel algorithm for the simulation of tumor growth using two dimensional Helmholtz's wave equation on a distributed parallel computing system. The numerical finite-difference method is chosen as a platform for discretizating the wave equations. Parallel Virtual Machine (PVM) software is emphasized as communication platform in parallel computer system. The performance of the parallel computing is analyzed. This proposed system will reduce the painful situation of regular diagnosis to the brain tumor patients in early detection stage.

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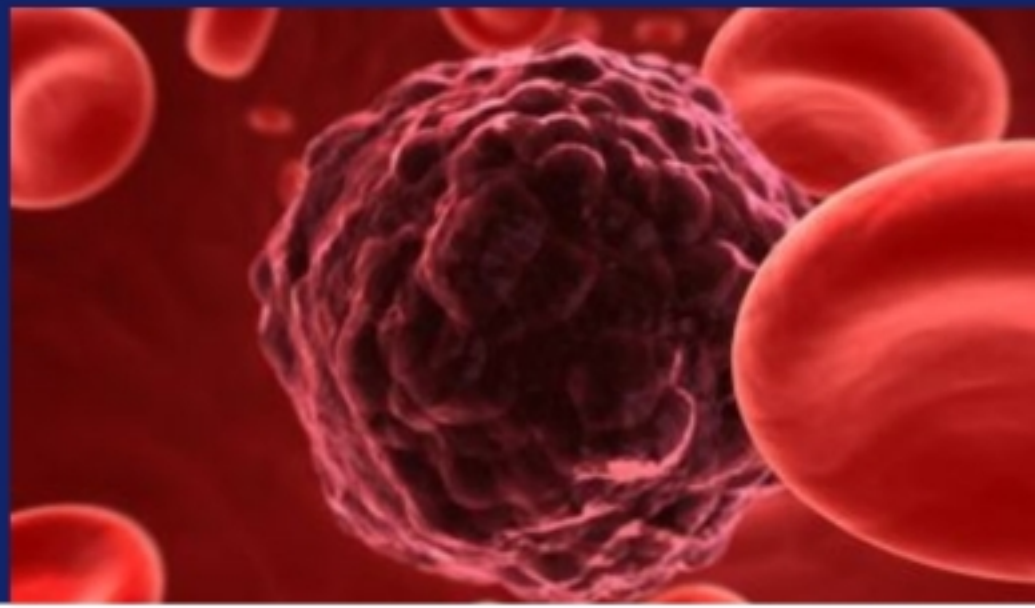

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Tumor Growth Prediction Using Parallel Computing

Numerical Solutions based on Multi-dimensional Partial Differential Equation (PDE)

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